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ABSTRACT

In the early 1980's the Papua New Guinea Department of Education developed a plan to supplement the existing academic curriculum of the four elite matriculation colleges (Grades 11-12) with experiences that gave some initiation into the design and use of technology and some understanding of its impact. The planners encountered difficulties of three types. The first related to opposition to any proposals for change in staffing patterns which threatened the promotion achievements or training investments of existing staff. The second problem was that any proposal for change could be seen as a threat to the capital investment in the existing curriculum. The third problem related to the membership of power groups, such as advisory committees and boards of studies. Dominance of these groups by individuals interested in maintaining the status quo or people without planning or system administration experience predisposed the committees to conservative decisions or delaying tactics. Solving these problems would require securing common understanding and acceptance of some new definition of a secondary teacher's competence, and paying more attention to the membership of planning and organizing groups. A postscript to the paper adds that the technology curriculum project continues to make "slow progress." (KH)

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MOVING AWAY FROM THE PACKAGE OF SUBJECTS CURRICULUM IN THE SECONDARY SCHOOL: SOME INSIGHTS INTO POSSIBLE PROBLEMS FROM AN ATTEMPTED INNOVATION IN PAPUA NEW GUINEA

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INTRODUCTION.

During the course of 1980 administrators within the National Institutions Division of the Papua New Guinea Department of Education began working on a proposal to supplement the existing academic curriculum of the four elite matriculation colleges (Grade 11-12) with experiences that gave some initiation into the design and use of technology and some understanding of its impact. (Department of Education, 1980: 15) Such a move might be considered unusual for institutions catering for the academic elite destined for university education. The innovation was partly a response to another project, lower down at the provincial high school level (Grade 7-10) which was attempting to teach the practical use of knowledge in village related situations. In the period 1980/81 it became obvious that the teachers in the schools concerned generally favoured a greater emphasis on technology education but not as a new subject. (Department of Education 1981(a):10) Curriculum planners then started working along lines of enrichment, club activities and school projects and in so doing started to face problems that may appear anywhere when moves are made to provide functional secondary education in terms of needs and wants, with little reference to curriculum categorization in terms of traditional subject areas. These problems included new definitions of teacher competence, novel forms of school organization, and problems in getting authorities to recognize and plan for the necessary organizational and institutional changes.

THE INITIATION OF THE PROJECT.

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The Papua New Guinea Department of Education has a traditional bureaucratic authority structure with a centralized group administering curriculum development matters and, for a variety of reasons, being usually the initiators or leaders in major curriculum changes. A proposal developed by this group in 1980 aimed at developing awareness of technology issues and practical problem-solving abilities. The first form of the proposal came in the form of an additional subject which was assumed to be a second best but simpler alternative (Saruva,

1981:3). The arguments for the so-called "Design and Technology Education Course" were based around a traditional definition of general education but one not commonly emphasized by "structure of the discipline" curriculum developers. (Ford and Pugno (eds.) 1964). This under-emphasized definition of general education points at the active use of knowledge as the real educational goal. Education is defined as an initiation into the 'use of knowledge for our true good and happiness'. (Reid, 1980). On this criterion the learning of Science, by itself, is not educational. For Science is not a practical subject; it is par excellence an academic generalizing subject. (Yoshiro, 1974). The innovation "Design and Technology Education" added some emphasis in the curriculum to the active use of knowledge. This was judged to be particularly important for the education of the elite of Papua New Guinea's high school population who would have important responsibilities in the political economic and technical affairs of a nation facing a range of development problems. (Saruva, 1981: 2).

The range of activities and experiences that might serve such educational goals is considerable. To some people study and analysis of design decisions or the social impact of technology use was "practical". (Longbottom, 1982: 166). To others the implications of practical problem-solving required a more active participation by the school in the productive and "real" life of the community through self-reliance, community service, commercial and other immediately motivating activities. (Chariton, 1982: 109; McBride, 1982: 128).

The proposal was first developed in the form of suggestions for an optional course, "Design and Technology Education" (Donohoe, (ed.) 1981). The innovation was regarded as challenging and controversial in this form given the "battles" over the last 150 years for the inclusion of Science, English and Social Science as new subjects in the secondary school curriculum, for example, in Britain. (Jones, 1977; Saffin, 1973). To the surprise of the planners of the innovation there was more support for what they regarded as even more controversial - an approach that included technology education activities without the addition of a new subject. Possibly the conservative forces favoured such an integrated approach because it seemed to promise to guarantee the existing status of subjects already approved for the curriculum. To the planners the integrated approach seemed the more ambitious because it implied a development of the curriculum defined in more functional terms than traditional subject areas.

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DEVELOPMENT OF THE PROJECT 1981/82.

By April 1981 the Board of Studies for the National High Schools was asking existing subject committees to report on how a greater emphasis could be placed on technology education in the existing curriculum (Department of Education, 1981(a): 10). There followed a National Seminar at the University of Technology in Lae on June 25-26 1981 which school staff representatives attended

and which was generally favourable to the innovation (Bailey (ed.) 1982). The final Board of Studies meeting of October 12-13 1981 gave broad support to the limited development of curriculum materials, teaching strategies and inservice for technology education within the current curriculum. (Department of Education, 1981(b): 9). The same Board of Studies meeting recommended Computer Education (another element of the Technology Education Proposal) be provided in schools on a club basis and that schools obtain computers and that recruitment of staff should provide at least one staff member competent to run such clubs. (Department of Education, 1981(b): 11). During this time the centralized curriculum development support group had been sketching out plans for revising staffing classifications, school organization, and evaluation of students and schools to take account of a more complex curriculum organization of club and extension activities. These scenarios outlined the common classroom learning activity as being possibly only one of three major school activities. What also seemed to be required were extensive programmes of activities and projects. One scheme outlined two programmes. The first would encourage functional learning and practical application in activities that were personally motivating to the students. The second programme covered the institutional interests of the school and its projects of self-reliance and community service. (Donohoe, 1982: 146). The curriculum planners then addressed themselves to defining a staffing structure for the national high schools which would take account of the greater emphasis on such project activities, clubs, and other programmes of community service which had been long standing features of school life but not as critical elements of the learning process. The Principals' conference in Wewak February 1982 however was not prepared to discuss any new ways of defining staffing structures or promotion positions within national high schools and deleted the item from the Agenda. [Donohoe, 1982(b)]. The National High School Board of Studies at its meeting in May 1982 decided to "ignore for the present" the problems of recognition of the implications of greater emphasis on curriculum extensions and project activities for staffing, school organization, and student evaluation. (Department of Education, 1982: 10).

DIFFICULTIES WITH THE PROJECT.

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The curriculum innovation roused considerable controversy and opposition at times. There doubtless were errors in communication and failures to use the best strategies and tactics at times. But deeper than this there appeared to be some very considerable structural and organizational problems in attempting to develop the national high schools curriculum from a 'package of traditional subjects' curriculum to a more functional one. Possibly secondary school systems anywhere running the package of subjects curriculum could face similar problems in a change to a functionally defined curriculum. The Technology Education project was not the first curriculum innovation to highlight the discordance in national high schools between official curricula and staffing designations and the desired and sometimes actual more functional curriculum meeting a broader range of educational activities and goals than learning of the traditional subject areas. But there

are real structural rigidities in the system and this attempted technology education innovation seemed to put some light on these. These problems could be of some wider interest. The Curriculum Development Centre in Australia, for example, has suggested new ways of approaching curriculum construction for secondary schools in this country which might encounter similar problems. (Curriculum Development Centre, 1980).

The difficulties encountered were of three types. The first related to the inherent opposition to any proposals for change in staffing patterns which threatened the promotion achievements or training investments of existing staff. The second problem seemed to be an appreciation of the capital investment value of current curriculum practices and inability to comprehend radically new ways of structuring courses, organizing school activities and of evaluating students. The third problem related to the membership of power groups such as advisory committees and Boards of Studies. Dominance of these by status-quo interest groups or people without planning or systems administration experience predisposed these committees to conservative decisions and delaying tactics. This is not to deny the reasonableness of the views and interests of the first two types, and therefore the reasonableness of the reaction in the third type of problem.

However if the traditional subjects curriculum is not meeting needs, and if the organizational difficulties outlined above cannot be solved, educational development in the national high schools of Papua New Guinea will be less than what is wanted, and possibly less than what is required.

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STAFFING STRUCTURES.

On reflection it is easy to identify natural forces of resistance to any attempts to move away from a subject approach. The promotion positions for secondary teachers in Papua New Guinea, as in many other countries, are identified with a particular traditional subject area (Subject Master/Senior Subject Master/ Subject Department Head). Overthrow of the subject curriculum would threaten the career prospects or the career achievements of the normal or current appointees to teaching positions in the secondary schools. Their professional training and career planning from pre-service days has been based around a traditional subject curriculum. What is not necessarily so obvious is how deeply rooted and significant this subject classification of teacher competence is. A teacher may not be given professional registration in Papua New Guinea unless he can show competence to teach a traditional subject area. Time devoted to outside or across subject interests may be discounted in promotion and efficiency assessments. Resources of time, money, buildings, and men are allocated within schools and to schools on a subject basis with allocations to new activities all part of a zero sum process.

CURRICULUM INVESTMENT.

The curriculum for national high schools had been in a standardization plase from about 1976-80. There was a sense of achievement of something of value:

> "The curriculum has reached a stage of refinement where the general feeling is that a balance is being reached between the time available, the needs of the students and the requirements of the two universities." (Saruva, 1982: IV)

Consequently any proposal for change, particularly radical change, could be seen as a threat to the capital investment in the existing curriculum. That capital investment is much more than a set of courses. It includes a way of organizing school activities, methods of evaluation and assessment. It is difficult to get teachers' understanding and involvement on a second level of curriculum development which involves long term radical change while using the capital investment in the existing curriculum in the short term.

There is a need for some estimates or judgements on the "capital" costs of updating curricula, not only in terms of the considerable task of course development but also of teacher training, support services, and management of new procedures. One considerable new investment cost in this type of secondary curriculum outlined by the Cucciculum Development Centre (1980) would be that of designing, developing and training staff in the use of accounting procedures to monitor students' development in a diverse range of categories. The novelty and development of costs of such procedures could appear to teachers to put them beyond practicality in any "ordinary" education system.

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COMMITTEES AND INTEREST GROUPS.

The actual decisions on the proposals for the Technology Education Project were considerably affected by the recommendations of the advisory National High School Board of Studies. This and other subject advisory committees hold real power through being the formal channel of professional teaching opinion and supposedly including representation of a range of interest groups. With a relatively small number of schools and bias towards direct rather than indirect representation this and other curriculum committees had a membership dominated by teachers with a clear self interest in the status-quo. The committee did not adequately reflect wider interests in the country. Nor did the field staff whose responsibilities are more situation specific necessarily bring a system perspective or planning experience with them, something that other administrators have to prove they have acquired over an extended time span. Although these are common and obvious enough technical problems they are problems and deserve attention. They were not given attention in 1981

and consequently the committees were biassed towards subject interest groups in both the schools' and the universities' representations which dominated them.

LOOKING AHEAD TO SOLUTIONS.

One obvious task is to secure common understanding and acceptance of some new definition of a secondary teacher's competence. To show what is involved consider the following possible eventualities:

- a teacher's competence is judged partly by his ability to direct/advise students on learning resources for common concept and skill learning tasks (individualized instruction materials, computer-aided instruction) - as a doctor prescribes drugs.

- a teacher's competence is judged partly by his ability to monitor and account for a student's adequate or appropriate educational development (possibly requiring the teacher to read and interpret technical statements on achievement levels and evaluate or arrange evaluation of personal, social, intellectual progress).

- a teacher's competence is judged partly by his management, entrepreneurial and human relations skills in handling school projects.

- a teacher's competence is judged partly by his skill in traditional classroom teaching of some knowledge or skill area.

Such an eventuality obviously would give much less emphasis to traditional teaching skills than occurs now. Alternatively teachers might specialize in such functional areas as resources development, evaluation, school organization, core learnings, or project activities support. The rejection of discussion on these by even leaders of field staff is understandable in that the description is so foreign to current practice and apparently "light years away". Nevertheless even in Papua New Guinea there were signs of the need to revise definitions of teacher competence in other areas as well. The distance education institution was proposing to revise its staffing structure around common functions of liaison and evaluation, student services, and course development, in place of a scheme which identified the staffing structure solely by the particular courses offered at a particular time. Such a change in role definition will require the understanding and approvals of many elements in the education system, including teacher registration, appointment and training authorities.

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The effort required to routinize school organization for the achievement of the multi-dimensional learning objectives described in the Curriculum Development Centre (1980) document seems considerable. Consider what a capital investment the Macdonald's hamburger franchise is apparently worth in terms of efficient routines for a relatively simple operation. At the moment teachers have a familiar hierarchical model of learning from the academic disciplines by which to judge student progress.

Nothing less than the efforts similar to those invested in the Nuffield Science Course and other major Chemistry and Physics course innovations seems necessary. However revolutionary development may be feasible if teachers and committees can accept a ten to twenty year programme of development.

To this end considerable attention should be given to the membership of planning and organizing groups to ensure the right balance of vision and experience, system perspective and grass-roots knowledge, professional and community interest groups.

CONCLUSION.

As the implications of the move away from the 'package of subjects' curriculum become increasingly obvious, the planners felt like climbers repeatedly reaching one ridge merely to espy a higher one further on. And certainly the radical nature of the changes required seemed like unreal futuristic scenarios to the busy classroom teacher and the committees on which he served.

POSTSCRIPT.

At this time after two years of development, a national seminar, the publication of two books, the allocation of fifty per cent of a Curriculum Development Officer's time, the initiation of a newsletter, and the appointment of school co-ordinators, the project is making 'slow progress'. (Munkley, 1982).

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